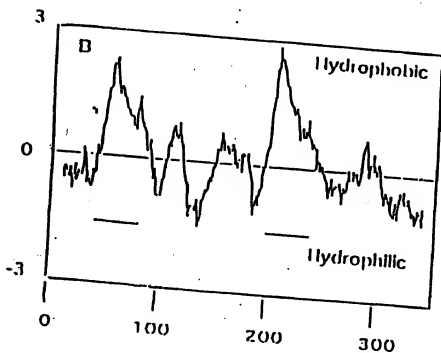
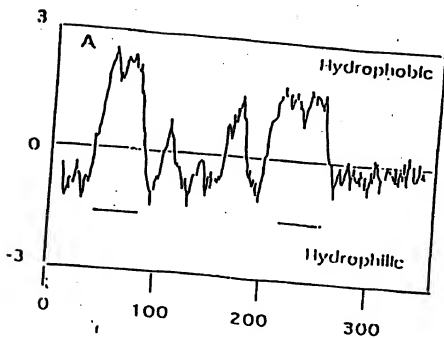


08/934254

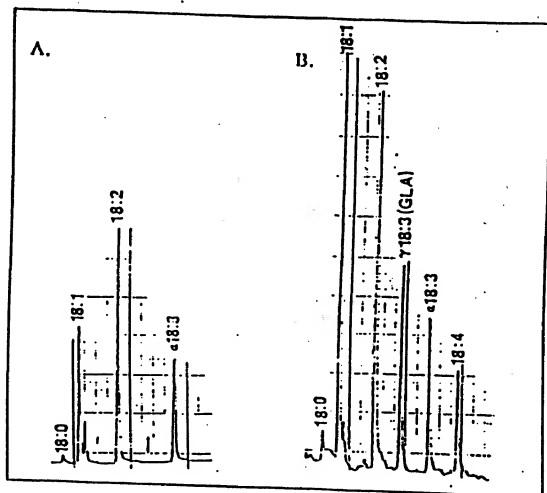
FIGURE 1



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FIGURE 2

Detector Response



Retention Time

FIGURE 3

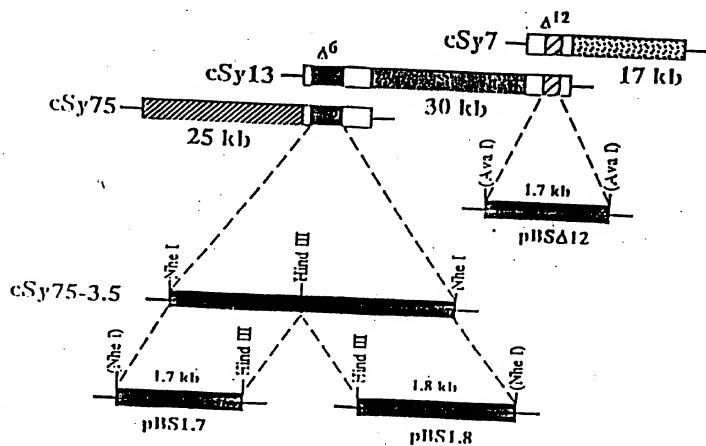
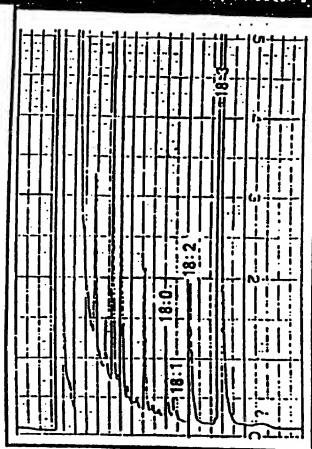


FIGURE 4

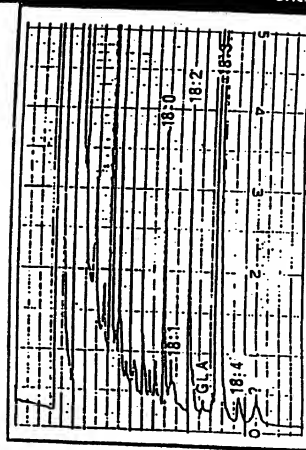
A

Fatty Acid Methyl Esters from
Seeds of Tobacco (Wild Type)



B

Fatty Acid Methyl Esters from
Transgenic Tobacco (Δ6 Desat)



08934454-091997

A

1 aatattacc taacctccca aagagagtag tcatitttca
81 aactcaaga cccagataaa cccgagatc tatggatctc
161 gaccatccag gtgcagctgt tcccttgag agcttgctg
241 cctcatagg aagaactctg ataattttt cactgggtat
321 atagaagctg tgggtttgag ttttctaaa tgggtttgta
401 atagcaatgc ttttgctat gagtgttat ggggttttgt
481 gtaggggtct ctttgatc agagtggtg gattgacat
561 aaagtgttat gggatattt gctgcaaat gtatttcagg
641 caactggct gtaatagctt gtaatatgac cctgatttac
721 ttcactacc tctatgtct atgaaaaag gtgactttt
801 cattttacc tatattgt gtgcctagg tgcattatga
881 tctatcagag ctgagaact cttggatgc ctgattgtct
961 gggtagaaga atatatgttg ttatgcaag ttatcactg
1041 cctcagagt ttatgttga aagctaaag ggaataatg
1121 cctctcttga tggattgtgt tcatgttga ttgcaattc
1201 ccttagaaga atctgcctt acgtgatcga gttatgcaag
1281 ccaatgnaat gacactcaga acattgagga acacagcatt
1361 gtaggggaag cctttcacac tcatgtttaa aattaccctt
1441 gtgtttgtc ttgtttctac ttgttggaat ctttgaaat
1521 ggggttttgc ttcatctctc attattgat antcaatgagt
1601 gaatgactt tgtaccactg tgttttccgt tgaapctcat
1681 tattt

tcaalggctg ctcaaaatcaa gaataecat accicagatg 80
gattcaaggg aaagcctatg atgtttcga ttgggtgaaa 160
gtcaagaggt aactgatga tttatggat tcatctctgc 240
tgacaaaaa ggtcattgt tctgaggtt tctcaagatt 320
tttgtgaggg tgttttgga ctttttgta ttgtgcaac ttgtgcttt 400
gagtcgggc attatatgtt agtgtctgt tcaagactta 480
aataaglatt gtttgttga aatggaaca taatgacat 560
aataatacc attctctgt gtgtcttcca agttttttgg 640
gtactttat caagattctt tgaagtat caaatgga 800
tgacaaatct ctcataagt tgttgacca ggaataatg 880
cgatttgatn cccgttgtt gttctctgt tgcctaattg 960
atcgggaagc acaagttica gttctcttg aaccttct 1040
gtttgagaa caaagggtg ggaacttga ctttctgt 1120
aaattgagca tcaattgtt cccaagatc ctgagtgc 1200
naacatnnt tgccttcaa ttatgcat tttctcaagg 1280
gtaggctaug gatatacca agcgtctcc gaagatgtt 1360
aattcttga ataatgttag attatgata tctatgttt 1440
tttcttttat ggtttattag atgttttta atatatatta 1520
tttcatattgt caattgtgtt gtcanaata tgatatattg 1600
gtgtacttct atagactttg ttcaaatggt tatgtcatgt 1680

B

1 MAAQIKKYYT SDELKNDKPK GDLWISIOCK AYDVSDWVKD
81 LKDYSVSEVS KDYKLVFEF SKMGLYDKKG HMFATLCFI
161 ~~AGH~~YMYVSDS RLKFMGIFA ANCLSGISIG WKKWNNHAH
241 SUSRFVSQV HMTFYPMCA ARLNMVOSL IMLLTRNVS
321 GHOQVQFSLN HFSSVVYVGK PKGNWFEKO TDGTLDISCP
401 HNLPLYNASF SKANWTLTRT LRNTALQARD ITKPLPKNLV

IIPGSSFPLKS LAGOEVTDFA VAFIPASTWK NLDKFTGY 80
AMLFAMSVYG VILFCGVLWH LFSCLAGFL WTQSGXAGHD 160
IACNSLEYDP DLOYTPFLV SSKFFGSLTS HFYKRLTFD 240
YRAQLIGCL VFSIWPPLV SCLPWIWERI MFVIALSVT 320
PWNDFHGGGL ~~QOQI~~HHHLFP KMPCNLRKI SPVVELCKK 400
WEALTHG 448

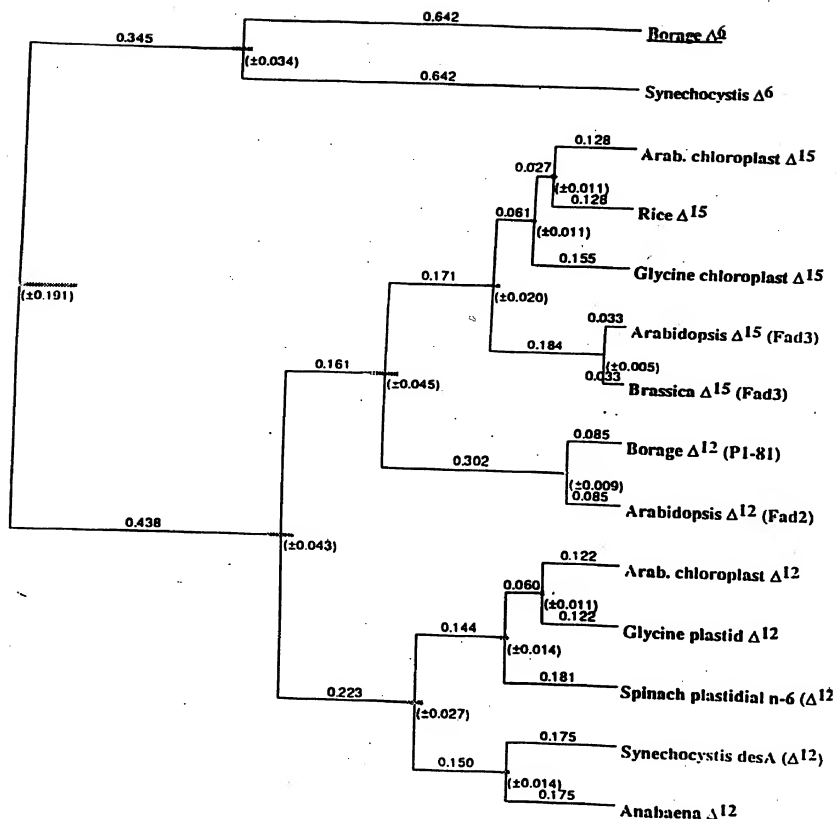


FIGURE 6

08924254.091997
166160-15242680

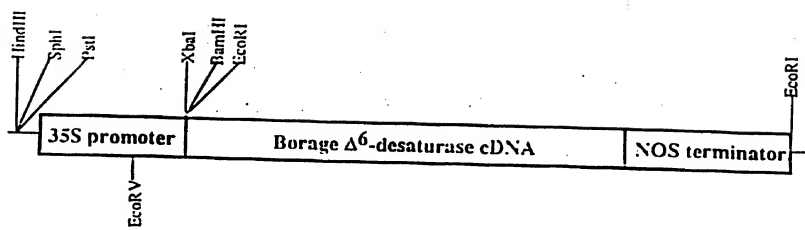
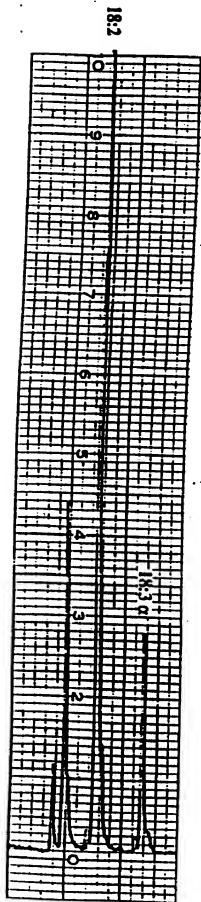


FIGURE 7

A



B

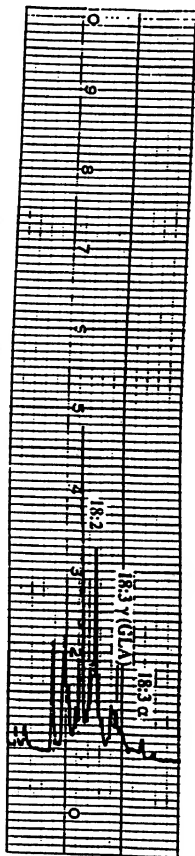
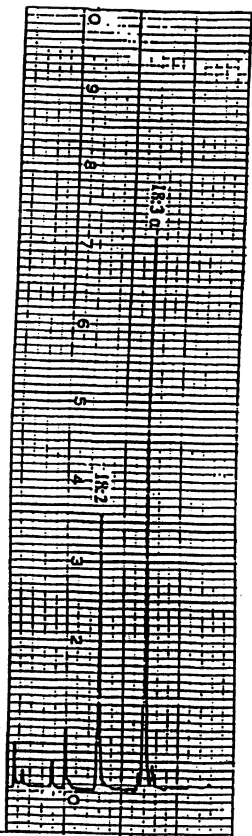


FIGURE 8

08934254.091997

A



B

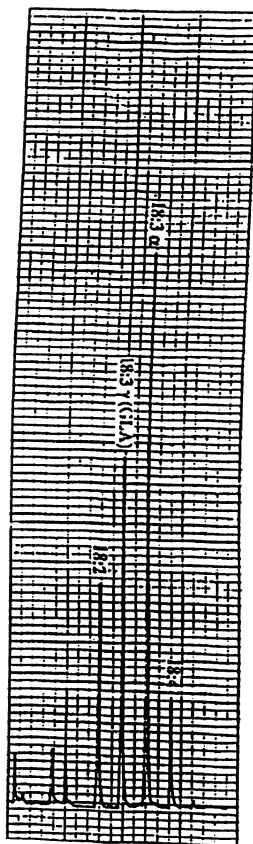


Fig. 9

Complete DNA sequence and deduced amino acid sequence of
Evening Primrose putative Δ^6 -desaturase

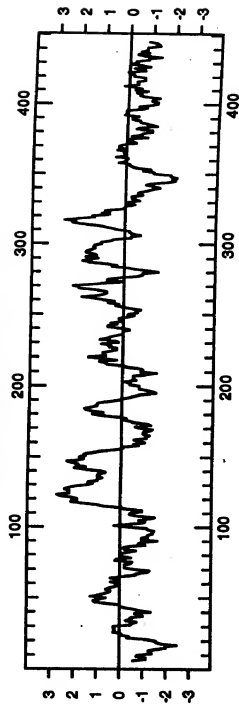
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 M E G E
 GCT ANG ANG TAT ATC ACG GCG GAG GAC CTC CCG CCG CAC AAC ANG TCC GGC GAT CTC TCG
 A K K Y I T T A E D L R R H N K S G D L W
 ATC TCC ATC CAG GGC ANG GTC TAC GAC GTC TCT CCG TGG GCG GCG GAG CAC CCC GCG GCG
 I S I Q G K V Y D V S R W A A E H P G G
 GAG GTC CCG CTC CTC ATG CTG GCG GCG CAG GAC GTC ACC GAC GGC TTC ATT GCG TAC CAC
 E V P L L M L A G Q D V T D A F I A Y H
 CCG GCG ACG GCG TGG CCG CTT CTG GAT CCG CTC TTC ACC GGC TAC TAC CTC ANG GAC TTC
 P G T A W R H L D F L F T G Y Y L K D F
 GAA GTG TCG GAG ATC TCC ANG GAC TAC CCG AGG CTT TTG AAC GAG ATG TCG CCG TCC GCG
 E V S E I S K D Y R R L L N E H G S R S G
 ATC TTC GAG ANG ANG GGC CAC CAC ATC ATG TGG ACG TTC GTC GGC GTT GCG GTC ATG ATG
 I F E K K C G H H I M W T F V G V A V M M
 GCG GCA AEC GTC TAC GCG GTG CTG GCG TCG GAG TCC GTC GGA GTT CAC ATG CTC TCC GCG
 A A I V Y G Q V L A S E S V G V H M L C G
 CCA CTG CTG CCG TTG CTG TCG ATC CAA GCG GCG TAT GTG GGC CAT GAC TCC GCG CAT TAC
 A L L G L L W I Q A A Y V Q H D S G H Y
 CAG GTG ATG CCA ACC COT GGA TAC AAC AGA ATC ACG CAA CTC ATA GCA GGC AAC ATC CTA
 Q V M P T R G Y N R I T O L I A G N I L
 ACC GGA ATC ACG ATC GCG TGG TGG ANG TGG ACC CAC AAC GCC CAC CAC GCG TCC AAC
 T G I S I A W W K W T H N A H H L A C N
 AGC CTC GAC TAC GAC CCG GAC CTC CAG CAC ATC CCG GTA TTC GCG CTC TCC ACC CGA CTC
 S L D Y D P D L Q H I P V F A V S T R L
 TAC AAC TCC ATC ACC TCG GTC TTC TAT GCG CGA GTC CTG AAA TTC GAC GAA GTG GCA CCG
 F N S I T S V F Y G R V L K F D E V A R
 TTC CTA GTC AGC TAC GCG CAC TGG ACC TAC TAC CCG GTC ATG ATC TTC GCG CGA GTC AAC
 F L V S Y Q H W T Y Y P V M I F G R V N
 CTC TTC ATC CAG ACC TTT TTA TTG CTC CTC ACC AGG CCG GAC GTC CCT GAC CCG GCT CTA
 L F I Q T F L L L L L T R R D V P D R A L
 AAC TTA ATG GGT ATC GCG GTT TTC TGG ACG TGG TTC CCG CTC GTT GTA TCT GTT CTC CCG
 N L M G I A V F W T W F P L F V S C L P
 AAC TGG OCT GAA CCG TTC GGG TTC GTC CTC ATC AGC TTT GCG GTC ACG GCG ATC CAG CAC
 N W P F E R F G F V L I S F A V T A I Q H
 GTC CAG TTC ACG CTC AAC CAC TTC TCC GGC GAC ACA TAC GTG GCG CCC CCG ANG GCG GAC
 V Q P T L N H P S G D T Y V G P F K G D
 AAC TGG TTC GAG ANG CAG ACG AAA GCG ACG ATC GAT ATC ACG TGC CCA CCG TGG ATG GAC
 N W P E K Q T K G T I D I T C P P W M D
 TGG TTC TTT GGT GGG CTG CAG TTC CAG TTG GAG CAC CAC TTG TTC OCT AGG TCG CCG GGT
 W F F G G L Q E O L E H E L F P P R L P R
 GCG CAG CTT AGG ANG ATT GCG CCC TTG GCT CCG GAC TTG TGT ANG AAG CAG AGG ATG CCG
 G Q L R K I A P L A R D L C K K H G M P
 TAT AGG AGC TTC GCG TTT TGG GAC GCT AAT GTC AGG ACA ATT CCG ACG CCG AGG GAT CCG
 Y R S F G F W D A N V R T I R T L R D A
 GCG GTT CAG GCG COT GAC CTT AAT TCG GCG CCG TGC OCT ANG AAA CTT GAG TAT GCG GAA
 A V Q A R R G T L N S A P C P K K L G Y G E
 GCT TAT AAC ACC CAT GGT TGA TTG TGG TTT TGT GTT GTG GGT TCG AGG ATC TTC TTA TTA
 A Y N T H G *
 TGTGTTTATGTCACCAATTTGAAGCTGAATACCATGGAAGGCACTACGTTCAAGTTTTCAGCTGGTGGTGGT
 CCGTTGTTGGGGCAAGTGCAGATTATTTCTTATCCCATGTAATTTTGTGATTATGTTCTTATTCGATATCAATAA
 TAATTTATTTGATTAAATTTTGTGTTGTTGGGTGCTATAGCAAGTTTATATCTAGATATATATTTTGTGTA
 AAAAAA

FIGURE 10

09197-09160-454680

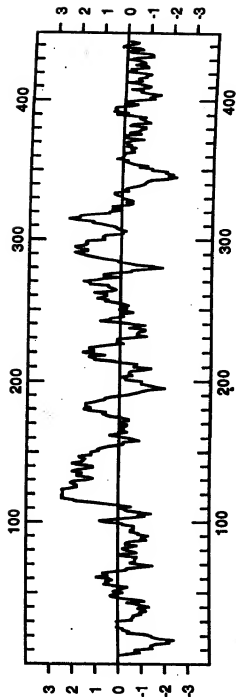
FIGURE 11

FIGURE 12B



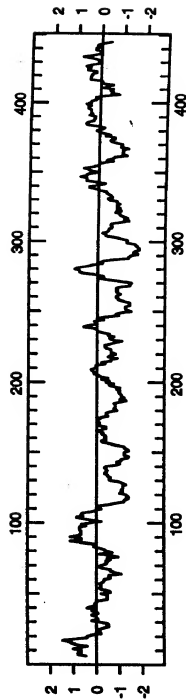
Evening Primrose Putative Δ^6 -Desaturase Kyte-Doolittle Hydrophobicity Plot

FIGURE 12A



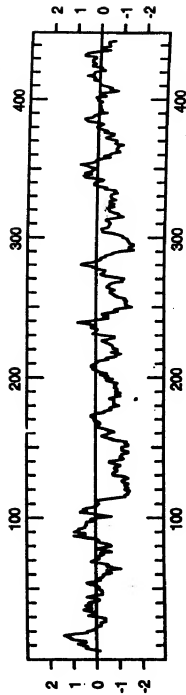
Borage Δ^6 -Desaturase Kyte-Doolittle Hydrophobicity Plot

FIGURE 13B



Evening Primrose Putative Δ^6 -Desaturase Hopwood Hydrophilicity Plot

FIGURE 13A



Boragin Δ^6 -Desaturase Hopwood Hydrophilicity Plot

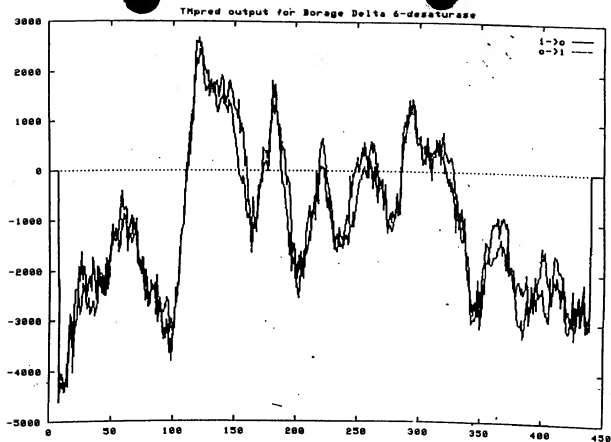


FIGURE 14A

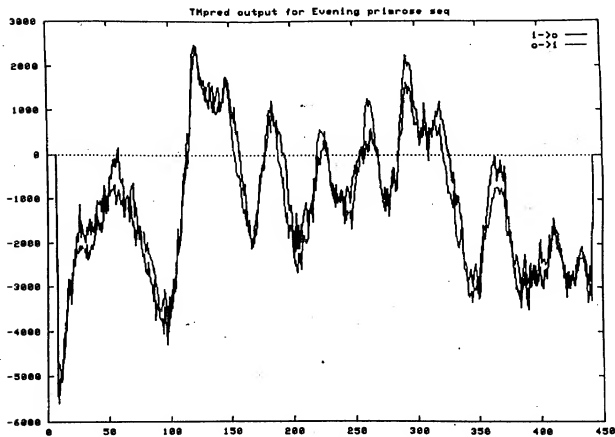


FIGURE 14B

766760-4524E680